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ABSTRACT

The document consists of three symposium addresses, pertaining to the provision and use of career information systems. Gerald C. Smith, Department of Labor, opened the symposium with an address on "Occupational Information systems: Uses, Developments, and Issues", which focused on career information systems currently being developed by the Department of Labor. David V. Tiedeman, Director, ERIC Clearinghouse in Career Education, in a presentation on "The In-Forming of Career: A Structure and Its Operational Needs" presented several computer-involved interactive guidance systems as well as suggestions to the Departments of Labor and Health, Education, and Welfare to assist these developments in becoming self-supporting. Barry E. Stern, Department of health, Education, and Welfare, spoke on "Evaluators' Logic vs. Common Sense: or What Would Thomas Paine Have Said About the Development of Career Information systems?", which raised issues about evaluation and policy-making in the development and support of computer-involved career guidance systems and places special emphasis on the needs of the consumer of the information. (Author/EA)

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A SYMPOSIUM ON CAREER INFORMATION SYSTEMS: ISSUES FOR REACTIONS

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U. S. Department of Labor

David V. Tiedeman
Northern Illinois University

Barry E. Stern
U. S. Department of Health, Education
and Welfare

In February 1976, the U. S. Office of Education was host through the Center for Vocational Education at The Ohio State University to the Second Career Education National Forum. Dr. Barry E. Stern arranged the symposium presented here for that conference.

The Symposium addresses several major issues surrounding the provision and use of career information systems. Dr. Smith kicks off the symposium by considering the development of career information systems on which the U. S. Department of Labor is currently embarked. Dr. Tiedeman is middle man both presenting several computer-involved interactive guidance systems which have come into being and suggesting some actions on the part of the Departments of Labor and Health, Education and Welfare which are needed to keep those developments alive sufficiently long for them to become self supporting. Finally, Dr. Stern raises issues about evaluation and policy making in the development and support of computer-involved career guidance systems.

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OCCUPATIONAL INFORMATION SYSTEMS
USES - DEVELOPMENT - ISSUES

U.S. DEPARTMENT OF LABOR
NATIONAL OCCUPATIONAL INFORMATION SERVICE

GERARD C. SMITH

SECOND CAREER EDUCATION
NATIONAL FORUM
FEBRUARY 11, 1976
WASHINGTON, DC

THE U.S. DEPARTMENT OF LABOR HAS RECENTLY FUNDED EIGHT STATES TO DEVELOP OCCUPATIONAL INFORMATION SYSTEMS. THEIR MAJOR GOAL IS TO PROVIDE QUALITY OCCUPATIONAL INFORMATION TO YOUNG PEOPLE AND OTHERS ENGAGED IN CAREER EXPLORATION AND DECISION MAKING.

THE USES OF THESE SYSTEMS ARE REFLECTED IN THEIR OBJECTIVES; WHICH ARE:

. TO HELP STUDENTS AND OTHERS LEARN ABOUT AND UNDERSTAND CAREER OPPORTUNITIES PRESENTLY AVAILABLE AND LIKELY TO BE AVAILABLE IN THE FUTURE.

. TO HELP ENTRANTS TO THE LABOR FORCE BECOME AWARE OF THE VARIETY OF OCCUPATIONS THAT THEY MAY FIND ACCEPTABLE AND PERSONALLY SATISFYING.

. TO ENCOURAGE PERSONS IN THE PROCESS OF CAREER EXPLORATION AND DECISION-MAKING TO SEEK OUT VOCATIONAL INFORMATION.

. TO INCREASE AWARENESS OF MAJOR SOURCES OF OCCUPATIONAL INFORMATION.

. TO PROVIDE SUPPORT FOR RELATED PROGRAMS, INCLUDING CAREER EDUCATION, OCCUPATIONAL COUNSELING, AND MANPOWER AND EDUCATION PLANNING.

THESE SAME OBJECTIVES ALSO POINT TO SOME LIMITATIONS OF THE SYSTEMS. OCCUPATIONAL INFORMATION SYSTEMS ARE NOT, NOR ARE THEY MEANT TO BE, TOTAL GUIDANCE SYSTEMS. RATHER, THEY ARE INFORMATION TOOLS THAT CAN BE USED BY THEMSELVES OR IN GUIDANCE AND CLASSROOM SETTINGS. THEY ARE TOOLS DESIGNED TO PROVIDE RELIABLE OCCUPATIONAL INFORMATION ON A TIMELY, UP-TO-DATE BASIS, AND IN WAYS THAT WILL HELP TO BRIDGE THE GAP BETWEEN SCHOOL, OCCUPATIONAL TRAINING, AND WORK. THEY ARE NOT DECISION-MAKING SYSTEMS OR TECHNIQUES, BUT THEY WILL PROVIDE A SOLID BASIS FOR INFORMED CAREER EXPLORATION AND DECISION-MAKING.

THE DEVELOPMENT AND USE OF OCCUPATIONAL INFORMATION SYSTEMS ADDRESS THE PROBLEM THAT MOST YOUNG PEOPLE ENTER UPON THEIR WORKING LIVES WITH MINIMAL AND OFTEN INCORRECT INFORMATION ABOUT THE WORLD OF WORK. YET, THERE IS A LOT OF GOOD INFORMATION AVAILABLE THAT NEEDS TO BE PULLED TOGETHER, SYSTEMIZED FOR DELIVERY, AND PRESENTED FOR USE. IT IS TO THESE CONCERNS THAT THE DEVELOPMENT OF OCCUPATIONAL INFORMATION SYSTEMS IS DIRECTED.

SEVERAL PRINCIPLES GUIDE THE DEVELOPMENT OF THE OCCUPATIONAL INFORMATION SYSTEMS FUNDED BY THE DEPARTMENT OF LABOR. AMONG THE MORE IMPORTANT ARE:

1. COOPERATION BETWEEN PRODUCERS AND USERS OF OCCUPATIONAL INFORMATION

2. Intensive information development efforts that maximize the use of available information

3. Systematic information delivery

4. User services and training

5. Cost sharing and eventual self support.

Cooperation Between Producers and Users of Occupational Information

To make the OIS systems work, cooperation between the major producers and users of occupational and educational information is essential; and the program requires formal cooperative efforts between key user and producer agencies (i.e., schools, employment and training agencies, business and industry). Minimally, this includes the State employment service agency, the State education system, and some local representatives from employer and labor groups; planning offices; and user agencies such as education, manpower training, and social service agencies. It is hoped that this kind of cooperation will minimize turf problems that all too often interfere with the real needs in serving consumers. Cooperative policy making boards of directors can iron out difficulties between agencies and provide means of sharing their strengths to develop the best possible systems.

Intensive Information Development Efforts

Since an information system is no better than its content, a key element of the NOIS program is to develop a high quality information base. OIS systems will employ people to engage in serious information development and the Labor Dapartment is providing assistance to help them learn how to do it. Program funds will not be used to produce new raw occupational data, basic surveys, or the like. The systems will leave the actual production of data to the Federal and State agencies that are responsible for this and will concentrate on compiling, appraising, formatting, and delivering the information.

The occupational information developed by these systems will include the nature of the duties of the occupation; personal, educational, experiential, and legal requirements for entry; wages and fringe benefits; current employment and employment outlook; industries that use the occupation; opportunities for promotion or career advancement; hiring channels; working and environmental conditions; descriptions of educational or training programs related to the occupation; and sources of additional information that can help with occupational exploration and job placement.

As well as tapping national sources for these kinds of information, information developers will seek out authoritative state and local sources. Among the kinds of data available are, for example, occupational projections, occupational employment statistics, special wage surveys, apprenticeship reports, compensation and fringe benefits reports, job bank openings summaries, and other job search information.

Information developers will seek, obtain, analyze, and appraise occupational information from a variety of published and unpublished sources and from interviews. They will synthesize the information into concise occupational statements. In addition, they will direct the continual updating of the preparation of new system components.

Systematic Information Delivery

Occupational information systems will also be concerned with delivering information to users. Delivery of information includes two broad functions: Accessing and Dissemination.

Accessing is the strategy used to search out and explore occupations. Information can be obtained directly or through structured search processes that generate lists of occupations related to interests, abilities, values, and the like. The systems require both types of search strategies.

DISSEMINATION CONCERNS HOW AND THROUGH WHICH MEDIA OCCUPATIONAL INFORMATION IS PRESENTED AND A VARIETY OF DISSEMINATION TECHNIQUES WILL BE USED. THEY INCLUDE COMPUTERS, MICROFILMS, AND PRINTED MATERIALS.

A WIDE VARIETY OF ACCESSING AND DISSEMINATION PROCEDURES HAVE BEEN DEVELOPED, BUT IT IS NOT POSSIBLE TO CONCLUDE THAT ANY ONE DELIVERY SYSTEM IS BETTER THAN ANY OTHER. FOR THIS REASON, THE DEPARTMENT'S GUIDELINES FOR THE DELIVERY COMPONENT OF THE OIS SYSTEMS ARE FLEXIBLE.

THERE ARE STANDARDS, HOWEVER, TO GUARANTEE TO USERS EASY ACCESS TO THE INFORMATION CONTAINED WITHIN THE SYSTEMS. FOR EXAMPLE:

- SYSTEMS COMPONENTS SHOULD BE USER-OPERABLE TO FOSTER INDEPENDENT USAGE.

- THE SYSTEMS SHOULD BE ACCESSIBLE AS POSSIBLE IN A VARIETY OF SETTINGS THROUGHOUT ALL OR MOST OF A USER AGENCY'S REGULARLY SCHEDULED DAY.

- VARIED MEIDA AND FORMATS FOR INFORMATION PRESENTATION SHOULD BE USED IN ORDER TO COMMUNICATE WITH INDIVIDUALS WHO HAVE DIFFERENT MEDIA AND STYLISTIC PREFERENCES.

- THE USER SHOULD BE ABLE TO RETRIEVE DESIRED INFORMATION REASONABLY SOON AFTER ENGAGING THE SYSTEM AND BE ABLE TO WALK AWAY FROM THE SYSTEM WITH A COPY OF AT LEAST A SUMMARY OF THE INFORMATION.

- INFORMATION DELIVERED THROUGH DIFFERENT MEDIA MUST BE COMPATIBLE.

ALSO INCLUDED IN THE PROGRAM'S STANDARDS FOR INFORMATION DELIVERY ARE CERTAIN GUARANTEES OF PRIVACY AND CONFIDENTIALITY OF PERSONAL DATA.

USER SERVICES AND TRAINING

USER SERVICES AND TRAINING BY OIS STAFF PERSONNEL WILL BE PROVIDED. THESE USER SERVICES SPECIALISTS WILL EXPLAIN AND PUBLICIZE THE SYSTEMS TO POTENTIAL USER GROUPS, CONDUCT INSERVICE TRAINING FOR COUNSELORS AND OTHERS, NEGOTIATE CONTRACTS, AND EVALUATE DELIVERY SYSTEM COMPONENTS.

COST SHARING/SELF SUPPORT

THE OCCUPATIONAL INFORMATION SYSTEMS GRANTS PROGRAM WILL BE COST SHARING. USER AGENCIES SUCH AS SCHOOLS WILL ASSUME THE DELIVERY AND EQUIPMENT COSTS. STATE AND LOCAL GOVERNMENTS WILL TAKE OVER THE FUNDING. THE GRADUAL PHASE-OUT OF FEDERAL FUNDING, THEN, COUPLED WITH THE LOCAL FINANCING OF INFORMATION DELIVERY WILL RESULT IN EFFECTIVE, EFFICIENT OCCUPATIONAL INFORMATION SYSTEMS OR NONE AT ALL.

Issues

It would seem that the development of occupational information systems is straight forward and issue free. Not so; issues are legion, but most are amenable to solution or resolution. I'd like to mention just a few issues and what we may be doing with them.

First is the fact that the NOIS program is a limited effort. Because this is a new and pretty much untried program, we are working with only eight States. A major issue is whether or not the effort should be expanded. Our current strategy is to take a wait and see posture. To assess the results of the initial efforts and decide where to go from there. We may fund additional projects and we know that as a minimum we will provide the results of the eight State efforts to others who may wish to develop similar systems.

Another issue is how to make the systems complete in terms of both occupational and educational information. The major thrust of the current effort is to develop quality occupational information. An issue that needs to be addressed is that of developing educational information. To the extent possible the NOIS grantees will try to develop educational information but serious thought needs to be given to the educational information side of the equation, and ways to integrate and bridge the two differing kinds of information.

ALSO TO BE EFFECTIVE INFORMATION SYSTEMS SHOULD BE USED IN PLACES WHERE THEY WILL DO THE MOST GOOD. AN ISSUE IS HOW TO MOST EFFECTIVELY USE OIS'S IN COUNSELING AND CLASSROOM SETTINGS. EXPERIENCES IN THE EIGHT STATES WILL PROVIDE USEFUL TECHNIQUES AND A BASIS FOR COOK-BOOK RECIPES FOR USING SYSTEMS EFFECTIVELY. CAREER EDUCATION AND COUNSELORS CAN HELP IN THIS AREA BY LEARNING ABOUT USES AND LIMITATIONS OF OIS'S AND FINDING CREATIVE WAYS TO INTEGRATE THEM WITH THEIR ACTIVITIES.

A FINAL ISSUE IS, WHAT GOOD IS AN OIS? ASSESSMENTS, EVALUATIONS, AND RESEARCH PLANNED BY NOIS SHOULD SHED LIGHT ON QUESTIONS OF EFFECTIVENESS AND HELP TO IMPROVE DEVELOPMENTAL EFFORTS AS WE GAIN MORE AND MORE EXPERIENCE.

THE IN-FORMING OF CAREER: A STRUCTURE AND ITS OPERATIONAL NEEDS*

David V. Tiedeman
Northern Illinois University**

Filing and In-formation

A filing problem exists every time folkkind have two or more facts/data which are relevant to an anticipated or later occurring situation. Folkkind ordinarily rely upon just memory for retrieval of facts/data when invoking them in the solution of current problems. But there are more difficult and powerful ways to relate facts/data to current problems.

The power exhibited by the accurate and complete recall of facts/data have motivated folkkind 1) to articulate facts/data, 2) to preserve them in logical sets, and 3) to enable their recovery in relation to anticipated usage. Various forms of inscription of facts/data such as writing, printing, card punching, and magnetic tape encoding have arisen as means for folkkind both to complete and to keep their articulations. Tables, graphs, letter files, data files, manuscripts, books, data processing organizations, and libraries have arisen as means to aggregate and to preserve that which folkkind have articulated. Finally, cataloguing, indexing, and search strategies have also arisen to aid recovery of such preserved articulations when needed.

Memory and filing are powerful means by which each of us guides our present relationships with our environment so that a part of our intelligence, the lessons of the past, exists in our actions. There are, of course, other functions

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* Presented at Second National Career Education Forum sponsored by The Center for Vocational Education at Washington, D.C., 11 February 1976.

** Dr. Tiedeman directs the ERIC Clearinghouse in Career Education.

of intelligence which determine whether in-formed (formed inside, that is) activity proves effective and even has power. These additional intelligence functions involve the capacity intuitively 1) to frame present circumstances as if they can be disarticulated and mastered, 2) to invoke past experience to suggest some solutions to the achievement of goals within the conceived situation, 3) to keep the totality in some kind of pattern to which minute by minute experiences in pursuit of individual purpose can be related to expectations, and 4) to assess the expected and the experienced in ways such that sound judgments are made about achievement (a) of that which is desired or (b) of revision in the desire and its implementative inceptions.

Folkkind who collaborate greatly enlarge their individual capacities to use intelligence in personal activity once articulation ensues. For instance, once you or I articulate something, the other can take advantage of it provided the other has it available and can understand it. Such collaborative forms of in-formation largely prove successful to the extent that 1) prior useful articulations are assembled and made available, 2) conventions exist for their encoding which can be mastered by another who wants to use them, and 3) common search strategies are enabled which can be augmented inventively individually but in their original form offer enough value to keep aggregates of individuals coalesced as groups coming back to the articulated and stored facts/data.

It is not easy to arrange a collaboratively useful resource which capacitates the in-forming of career as designed above. I address some of these difficulties next because their solutions are required in arranging a collaborative relationship between an individual and a computer particularly designed to facilitate and capacitate the in-forming of career.

Difficulties Encountered in Organizing a Collaborative Resource for the In-forming of Career

Folkkind must master their capacity for decision making in order to achieve in-formed careers. Decisions presume choice (Tiedeman and Miller-Tiedeman, 1975). Capacitation of folkkind's capability for decision making therefore requires opportunity for choices which are both of general and of career relevance. Although aware persons know that choices exist around them from moment to moment, unaware or fearful persons either fail to identify opportunities for choice or defend against their consciousnesses of them. Because of the large amount of unawareness and fear of career choice in the United States, we go to considerable lengths to protect persons against bad consequences thereby many times relieving persons of both opportunity and learning experience in decision making. Hence, the most fundamental prerequisites in organizing a resource for the in-forming of career are first to convince the country that choices are necessary if human decision making is to ensue, next to allay the fears of those who realize a need to try but fail to make the effort, and finally to wake up the many persons who are asleep to the opportunities for choice in living and in career.

For those who are awake to opportunity for choice in career decisions, the next problem gets to be that of providing each a file of facts/data relevant to the several educational and occupational choices which must be made during the further in-forming of career by engaging in understood decision making. Such files must 1) be provided inexpensively, 2) be current, 3) develop capacity for students to put choices in individually desired relationship to each other rather than only those relationships dictated by the existing categorizations and the bound or filed arrangements of facts/data, and 4) include other than

local assemblies of opportunities so that learners' choices are not limited to their neighborhoods.

An additional filing requirement exists in career decision making, namely that of relating education and occupation. The translation of what one knows into what one might do requires a table which has so far not been made available to individual users. The translation of what one has done into what one wants to know next has also not been rendered into a table with which individuals can interact to program relationships with which they want to experiment. The result is that a resource of considerable potential value to capacitation of the in-formed career is so far limited to those deciders who do this in their minds, not made available as a public resource enabling all citizens to work at this higher level of career decision making.

Once choices of a general and career nature become available to learners and once previously articulated files of facts/data about education and occupation become more integratively available, the United States will have empowered a resource in which learners' comprehension of decision-making development can become more common and more widely used, particularly in relation to the informing of careers. However, the mastery of the self lies between the individual's desire to decide and the use of the facts of another in the personal decision. The needed self mastery is realization that the articulations of another can in no way decide for a person. Filing systems can capacitate this realization provided they 1) offer learners opportunity to decide, 2) let them experience their efforts to give decision to the file, but 3) not permit them to complete their decisions without ultimately becoming responsible for them. In achieving the latter condition, the file system has to be arranged so that individual users can engage in some of the categorization and insight experiences which the person enjoyed who was permitted to put his or her articulation at disposal of another

person. Only understanding the turning of facts/data into in-formation yields comprehension of the position of the self in leading the deciding life and in applying that realization to the pursuit of career.

Individual and Computer Relationships for the In-forming of Career

We who individually maintain letter and book files frequently experience the large discrepancy which exists between the storing of articulated facts/data and the bringing of the previously articulated to bear on an issue of the moment. For instance, we ordinarily file letters by the names or organizations of their senders. We thereby facilitate their recall by those primary terms. However, should we want all the letters we wrote on a given day or should we want all the letters we wrote on the in-forming process, for instance, we then find our file system wanting because we ordinarily fail to cross reference letters in files.

Folkkind have turned to the computer to provide and use cross referencing. Items which are filed on computer tape with deep coding of content can readily be recovered from an entire file of such items with great speed and little trouble provided one is able to bear the expense. The Educational Resources Information Center (ERIC) is a good public example of this principal. ERIC files the documents it accessions in association with many descriptor and identifier terms. Multiple coordinate index searching of the computer tapes on which such items are stored then yields relatively exact identification of a fairly specific desired set of documents which in about 90% of the cases will also have microfiche copy of the original documents available for later perusal. Key-word-in-context search systems do even better than this since, without prior cross referencing, they permit search of more detailed files such as titles,

abstracts, or tables of contents to identify documents containing the words of direct interest.

Any computer system can be used a second or more time once an initial use has occurred. However, when later use is markedly delayed as is ordinarily the case with a batch-processing computer system, the advantage of repeated use dwindles and generally disappears. For instance, a learner who wants to identify the occupations satisfying a specific set of coordinates which was revised after his/her first unsatisfactory printout, is likely either to forget or not to care about the second printout returned after two weeks in relation to his/her revised set of coordinates. Folkkind's propensities of this nature have motivated development of what is termed on-line inquiry of computer systems. On-line computer systems certainly provide much more immediate response and frequently provide almost instantaneous response depending upon their programming and then existing user demand.

As might be expected, individual and computer relationships programmed for in-forming career have run the gamut of possibilities in experimentation. Some of the earliest systems to reach the commercial condition were batch processing systems for finding colleges which met a set of individually elected but programmatically condensed coordinates. Most of these systems, with the exception of the Oregon Information Access System which is underwritten by the State of Oregon, have gone out of existence according to Harris-Bowlsbey (1976). The necessity both to have repeated trials relatively soon after initial trials and to know what is going on as one specifies a set of coordinates yielding a satisfying choice seem to motivate persons to spend a buck for satisfaction rather than to waste fifty cents for an all inclusive list which fails to cause movement toward specification.

The interactive career guidance systems probably experimentally originated as early as the batch processing systems. However, a few of the interactive career guidance systems have actually progressed into a somewhat stable commercial market and are still being used today. The enduring interactive career guidance systems include the Educational and Career Information System, Guidance Information System, Computerized Vocational Information System, and the System for Interactive Guidance and Information. Harris and Tiedeman (1974) describe each of these systems as recorded in Exhibit 1 of the handout along with Harris-Bowlsbey's newest and improved interactive computer system, Discover, which is described in Exhibit 2 of the handout.

Additional Needs

When you consider the existing career guidance systems involving computers in their entirety, you realize the small extent to which computer companies, educational departments in our several levels of government, and individuals have coalesced to bring individual and computer relationships to a level where they are widely useful for the in-formation of career. The following requirements will have to be met in the next few years in order for our society to progress towards realization of a relationship between citizens and computers adequate to the in-forming of career:

1. Sellers of first-generation career guidance systems will have to continue to develop understanding and sales for interactive computer relationships in career guidance so that an informed public will exist for the second-generation Discover when it becomes available.

2. The goal of in-formed careers for all will have to be incorporated into the priorities of the Department of Health, Education and Welfare so that additional leadership and initiative can be generated for Discover's development and infusion into our society.

3. The National Science Foundation will have to collaborate with new leadership in DHEW in picking, developing and implanting, a computer system for the inexpensive support of educational technologies.

4. The Departments of Health, Education and Welfare and of Labor will have to take collaborative responsibility for the construction and maintenance of adequate educational and occupational job files respectively.

5. Discover will have to be completed and reprogrammed for operation in the system then supported by the National Science Foundation.

6. Cascaded longitudinal studies of the in-forming process will have to be initiated in association with Discover in order that we may achieve the fine tuning of Discover which will undoubtedly be needed for it reliably to cause in-formed careers.

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Exhibits* Accompanying

THE IN-FORMING OF CAREER: A STRUCTURE AND ITS OPERATIONAL NEEDS**

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* Taken from Harris, JoAnn; and Tiedeman, David V. The Computer and Guidance in the United States: Past, Present and a Possible Future (ERIC Clearinghouse in Career Education Information Series Number 2). DeKalb, IL: ERIC Clearinghouse in Career Education, Northern Illinois University, 1974. CE 001 936.

** Presented at Second National Career Education Forum sponsored by the Center for Vocational Education at Washington, D.C., 11 February 1976.

EXHIBIT 1

BRIEF DESCRIPTIONS OF CURRENTLY EXISTING DOMINANT

COMPUTER-INVOLVED GUIDANCE SYSTEMS IN THE UNITED STATES

I. Direct Inquiry Systems without Monitoring

A. The Guidance Information System (GIS) is a commercial system which made use of some of the ideas employed in the Information System for Vocational Decisions. This system, currently marketed by Time Share Corporation and Houghton Mifflin, is a direct inquiry system without monitoring. It offers the user an interactive search of four data files by entering coded characteristics which are explained in the user manual. These files are all two and four-year colleges in the United States, specialized schools in some regions, occupations, and financial aids. The user receives both a list of options and descriptive information about each. Current cost of the system is 75¢ per fifteen-minute use, or $3.00 per hour. For further information, write to

Time Share Corporation
Hanover
New Hampshire

B. The Oregon Information Access System (OIAS) is a statewide system in Oregon. It is an interactive direct inquiry system without monitoring, operating on IBM and Hewlett Packard computers with typewriter terminals. The system has six components: a) QUEST, an on-line questionnaire which assists users to assess interests and abilities, leading to the identification of occupations in the data file which have the characteristics desired by the user, b) information about occupations selected by the user, including local manpower data, c) information about training opportunities within the state, d) bibliography of reference materials for further information, e) taped interviews with workers in each of the 230 occupations in the data file, and f) local persons who are willing to discuss their occupations with students. The system is costing approximately $2.00 per student hour of use.

II. Direct Inquiry Systems with System Monitoring

A. The Computerized Vocational Information System (CVIS), developed by JoAnn Harris and colleagues at Willowbrook High School in Villa Park, Illinois, makes use of an IBM 360 or 370 computer and cathode ray tubes. CVIS is a direct inquiry with monitoring system. The system has three distinct parts: the guidance system, the computer-assisted instruction system, and the administrative system. The guidance system has ten subsystems: vocational exploration at junior high level with associated visual materials; vocational exploration at secondary school level; four-year college information and search;

community college information and search; technical school information and search; apprenticeship information; military information; local job search; financial aids search; and student registration. The CVIS system is in public domain and has been broadly distributed; it is currently operational in 122 sites in the United States. Current cost per student hour at the terminal is $1.92. An active consortium of CVIS users maintains its data files and shares in new developments. Further information about the CVIS system can be obtained from:

Mr. Enzo Giuntoli
Willowbrook High School
1250 S. Ardmore
Villa Park, Illinois 60181

B. The Education and Career Exploration System (ECES) a direct inquiry system with monitoring, was originally developed by the IBM Corporation. It has been given to the State of Michigan and is operational in Genesee Intermediate School District in Flint, Michigan. New developments and modifications of the system are underway at the site of operation. ECES III, the latest version, makes use of a cathode ray tube terminal, a microfiche reader, and an IBM 360-50 machine. ECES provides four on-line components and one off-line component. The on-line ones are exploration of 400 occupations with job duty samples, exploration of 400 post-secondary majors, and teaching and practice of decision making. The off-line component is a batch-process search of educational institutions, including four-year colleges, two-year colleges, and technical-specialized schools. Further detailed information can be obtained from:

Mr. Alva Mallory
Genesee Intermediate School District
Flint, Michigan

C. The System for Interactive Guidance and Information (SIGI) is under development and field test at Educational Testing Service, in Princeton, New Jersey. This system, unlike the others described here, is specifically designed for community college students. The system offers four subsystems: a) Values, b) Information, c) Prediction, and d) Planning. The first describes 10 occupational values, assists the user to weight them, and identifies occupations which may fulfill the user's combination of them. The second subsystem provides information about occupations selected by the user; the third allows the user to receive predictive statements about probability of success in given courses or curricula related to his occupational choice. The fourth assists the user with specific step-by-step planning toward implementation of career choice. The system is designed to operate on a stand-alone PDP-11 minicomputer with multiple cathode ray tube terminals. Further detailed information can be obtained from:

Dr. Martin R. Katz
Educational Testing Service
Princeton, New Jersey

EXHIBIT 2

BRIEF DESCRIPTION OF THE MODULES BEING DESIGNED FOR

THE SECONDARY SCHOOL COMPONENT OF DISCOVER

The user will enter this component through an entry module in which he will be identified, will receive instructions about how to use the system, will be introduced to the content of the modules, will review his last use of the system (if any), and will be guided to an appropriate beginning point. As in the Grade 4-6 component, the user may choose where he wishes to begin even if it is not in keeping with system recommendation. The modules of this component are as follows and will be suggested in the order listed here:

1A. WHAT ARE MY VALUES? (Value Clarification)

This module contains a number of experiences which lead the user to think about what a value is, to analyze his own set of values, and to decide upon actions which implement those values. The last part of the module proposes ten values related to occupations, based on the research of Dr. Martin Katz of Educational Testing Service. The student rates the importance of each of these ten values to him and may then ask the computer to search its data file for occupations which can provide the combination and weighting of the values assigned by the user. The summary of work values is retained for later use in the system.

1B. HOW CAN I MAKE A DECISION? (How To Make a Decision)

This module assists the user to become aware of various kinds of decision-making styles. The Planful Decider process is taught, and a variety of exercises are posed for practicing the steps of planful decision making.

1C. HOW ARE OCCUPATIONS CLASSIFIED? (Classification Systems)

This module presents the world of work by way of two organizing principles: the data-people-things division used in the Dictionary of Occupational Titles, and Holland's six groups. A number of exercises are presented to give the student practice at using these classification systems; the student's responses are monitored for the purpose of providing more instruction if needed.

2A. PRACTICING DECISION MAKING

This module allows the user to construct a decider in the age ranges of 15-20, 20-30, or 30-40 and select the types of problems with which he wishes his decider to deal. Then problems are posed which are typical of the age range selected by the user, and the system monitors the process by which the user makes a decision about the resolution of these problems.

2B. CAREER DECISION GAME

This module is a monopoly-like game designed by the DISCOVER team which may be played by one or two players. In the beginning of the game, the student is introduced to the concept of weighting values. He is invited to place relative weight on three possible goals: income, recognition, and happiness. Winning his career decision game consists of reaching the number of points under each of these three categories to the degree at which he said they were important to him. The game is played by the user by moving forward on a board based on the random "throwing of the die" by the computer. The spaces on which the user lands may provide him with an opportunity to make decisions about choice of occupation, educational options, use of leisure time, or life style. On the other hand, they may subject him to some of life's events, such as unexpected setbacks, unexpected opportunities, and payment of necessities such as housing, clothing, and transportation. The user may also acquire plan cards which allow him to have more control over his life than the computer's rolling of the die affords. The way in which decisions are made on the "decide" squares may add points toward the values for which the players are playing the game. The game ends when the player has received the score which he has set for himself under the categories of income, recognition, and happiness.

2C. BROWSING OCCUPATIONS

This module makes use of the Holland classification system presented in Module 1C, as an organizational structure by which the user can browse the world of work. The module allows him to touch any point of the Holland hexagon and to be presented with a list of occupations which fall in that particular segment of the circular world of work. The user may select titles from the list and ask for related occupational titles, work duties and activities.

3. WHAT ARE MY INTERESTS AND COMPETENCIES? (Self-Exploration)

This module is John Holland's Self-Directed-Search administered and scored on-line. This instrument is a self-report of the user's career-related interests, experiences, and competencies. These data, collected via the items on the instrument, result in a three-letter code, which is a summary of the user's vocational personality. This code and its meanings are carefully explained to the user.

4. MAKING A LIST OF OCCUPATIONAL ALTERNATIVES (List of Occupations)

This module provides the user with a list of occupations which appear to be consistent with the vocational personality indicated by the three-letter code explained in the previous module. The computer searches its data file to produce lists of occupations which have relative degrees of consistency with the student's code, based upon Holland's theory of vocational choice and his Occupations Finder.

5. COLLECTING INFORMATION ABOUT MYSELF AND OCCUPATIONS (Trying on a Job)

This module allows the user to get a great deal of information about the occupations on his list. In a series of displays, some making use of visual materials, the user may receive information about job duties, benefits and limitations, educational requirements, future outlook, related careers and additional sources of information. The user also has the capability to review his own student record (record of grades in related courses, related work or course experience, present rank in class, etc.) against the requirements of the job or of its prerequisite training. The module also allows the capability to compare two or more occupations by calling in data about both or several simultaneously. The user leaves this module with a list of occupations in which he has serious interest. This list may be a shortened form of the list with which he entered the module or may be a new list which he has generated by searching the occupational data file by the combination of a variety of characteristics of jobs.

6. EVALUATING AND NARROWING CAREER ALTERNATIVES (Personal Career Decision Making)

The user enters this module with the list of occupations from the previous module or with a new one which he generates at the beginning of this module by selecting job titles from a list or by searching the data file by a combination of characteristics. The purpose of this module is to assist the user to narrow the list further so that he leaves the module with a first-choice occupation in mind and a limited number of others in priority order. This narrowing is assisted by the capability to ask for additional information about any occupations on the list, to compare information about two or more occupations, and by analyzing the remaining occupations in light of the work values identified in 1A or here if not done previously. Finally, the user is asked to remove occupations which are no longer of interest and to put the others in priority order. The user leaves the module with a top-priority selection.

7. MAKING A SPECIFIC CAREER PLAN (Career Planning)

The user enters this module with one specific occupation in mind for which he wishes to implement a career plan. The module takes him through four specific steps. The first is choosing the plan of entry into the occupation. For some occupations there may be only one road, such as four-year college; for others, there are several roads, such as on-the-job training, community college technical programs, private vocational schools, or the military. The second is a look at the courses in high school which may best facilitate this plan. From this point, the user might branch to "Request-A-Course" which allows him to register for the following semester, year or quarter. The third step is a look at role testing experiences which the student has had in relation to this occupation such as part-time jobs or participation in related extra-curricular activities, and the recommendation of others if his experience seems to be inadequate. The fourth step is the choice of a specific place or institution in which to implement the vocational choice or to get the training for it, i.e., the choice of

a local company, technical school, community college, continuing education program, college, military program, or apprenticeship. Planning may also involve finding appropriate local funds, grants, or scholarships. The completion of the fourth step involves very sophisticated searches and interaction with nine large data files. These same data files are used for the counselor support system. The user may enter this module and go directly to any of these search programs or recall information about any of the schools or programs in the file without going through the complete module.

EVALUATORS' LOGIC VS. COMMON SENSE

OR

WHAT WOULD THOMAS PAINE HAVE SAID ABOUT THE DEVELOPMENT OF CAREER INFORMATION SYSTEMS?

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In a bicentennial year, it seems altogether appropriate to link current educational issues to the philosophical bases of the American Revolution. Since President Ford has already done so by his State of the Union Message reference to Tom Paine's Common Sense it's more than appropriate. It's downright compelling.

The fact that we have to be reminded of the need for applying some common sense is itself a reflection of the fact that too often common sense is an uncommon commodity. This is nowhere more obvious than in relation to developing policy concerning career information systems.

Why has common sense about career information been so uncommon? Not because the basic issues are so complicated, but because exclusive reliance on research and evaluation evidence to formulate policy has made them seem complicated. And not only complicated, but carrying with them in my estimation an unbearably heavy freight of projected public costs.

In the next few minutes, I will try to make five points: (1) that in retrospect Federal policy to invest considerable amounts of taxpayers' money in the computerization of the career guidance process without a prior or at least concurrent attempt to develop and disseminate to students high quality local labor market information was probably a mistake; (2) that

such a mistake would have been less likely to occur if the Departments of Labor and HEW had coordinated their efforts in this area; (3) that because of this policy it is now difficult to evaluate the comparative worth or effectiveness of the various systems, making it difficult for potential consumers of these systems, e.g., school districts, to choose among them; (4) that adequate information bases have not yet been established in the vast majority of States and local areas, resulting in the preposterous situation where career education exists in most places without career information (but rather misinformation); and (5) that the reason why this problem persists in the great majority of States is because educational decision-makers have relied too much on evaluators' logic and research evidence rather than upon their own common sense.

Possibly this latter point is the most important and a discussion of it will shed some light on the others. Perhaps the best way to clarify this issue is to line up some of the key questions asked by Federal evaluators about career information systems and then determine how useful the answers to them would be for policy formulation.

All of these are good questions. They should be asked and the answers will, indeed, contribute to the policy making process. But answers to these questions alone don't tell you how to assign priorities for public funding. Let me illustrate.

First, evaluators are concerned rightly about the extent to which students use career information systems and whether any good comes from such use. Fortunately, there is information which will please the

evaluators. Students do indeed use many of the systems which are available, and those who use them tend to score higher on occupational knowledge tests than those who do not. Furthermore, we have data from the longitudinal surveys of the labor force conducted by Parnes and associates that knowledge of occupations among young men is positively correlated with early labor market success as expressed by hourly earnings and score on the Duncan Index of occupational status, even even when other possible explanatory variables are controlled, including socioeconomic status, educational attainment, quality of high school attended, measured intelligence, and health condition. It would seem reasonable to assume, also, that students who make informed choices will enter work which is more personally satisfying than if they were uninformed.

Let's say, for the sake of argument, that studies showed no relationship between the availability of systems and knowledge of occupations on the one hand, and between such knowledge and labor market success on the other. Does that mean that we should not go to the trouble to develop accurate labor market information on which to base career decisions? I fear the evaluator would say, "We shouldn't invest in developing this information until we are sure that people will use it and that using it will do them some good." In my view, there is a prior question that should be asked -- a question that comes not from scientific inquiry, but from our American system of values. And that is, do people have a right to know about the economy in which they live or don't they? Do Americans have a right to know about the nature of work

in their local communities and home states or don't they? If the answer is yes, the next question is, "Does the State have the obligation to provide citizens with the very best labor market information available?"

Believe it or not, these prior questions hardly have been addressed by the Federal Government. The "Feds" continue to ask the academically respectable evaluation questions: how can we be sure that the best quality information is collected at the lowest cost? that it is delivered efficiently to users? that it is packaged in a form in which it is likely to be used? and that it will be interpreted properly in making career decisions? All good questions! But what ever happened to the common sensical notion that in a free society people have the right to get accurate information upon which to make their life choices, whether or not they use it or are intelligent about the use of it? When we buy merchandise such as cars or services such as health care, don't we assume that we have a right to know about what we are buying? Whether or not we make intelligent consumer decisions, don't we assume that we have a right to get accurate information on which to base those decisions? And don't we assume that the quality of decisions is no better than the information upon which it is based?

The right to know the facts about the labor market would appear to be a high priority item in career education, but it isn't. Indeed, under the auspices of "career education" much misinformation about the labor market is disseminated. Students tend to get their occupational information from professionals with very little experience and exposure to

non-educational work, or they might get if from a career resource center in the school which frequently includes any occupational material that can be thrown together, whether it is verified or not. Teachers and counselors might get national occupational information from such reputable sources as the Occupational Outlook Handbook or the Dictionary of Occupational Titles or some commercial rewrite of these Labor Department publications, but in almost all of the states and local areas there is no accurate and comprehensive labor market information that can apprise people of local occupational prospects. Even if verified national information gets to students, it tends to be two years out of date by the time it is published. National information based on averaging techniques can also be quite deceiving, for it might not and frequently does not resemble the actual local occupational conditions which exist. Inasmuch as most early career decisions appear to be based on impressions of the local and not the national occupational structure, it would appear that the provision of such information would appear to be a necessary though not sufficient condition for career education. Unfortunately, the local information which students and their mentors get tends to be purely subjective and based on personal experience or company advertising.

Career education without localized, up-to-date, and accurate career information, then, would appear to be a dubious activity at best.[1/] Yet that is what we have. Many career educators claim that it is more important for students to learn the skills of career planning and decisions-making first so that they will know how to process the information once they get it. But what good is it to process misinformation? No matter how well students understand the process, knowledge of the facts is important, too. Common sense ought to tell us that process is no substitute for content. Both are important.

Well, what about some of the other points that evaluators make about the development of career information systems?

1/ Those who disseminate career information in schools, whether through a system or through an information center housing pamphlets, casettes, the like, might well question how this information was developed. Suspicions about the value of the information should be aroused if one or more of the following situations is observed:

(1) that national information only is disseminated and that it is not up-dated at least once every two years (e.g., old copies of the Occupational Outlook handbook on the shelves);

(2) that local or state data if available, is developed from one source only, or if from several sources, it is not appraised by technically qualified people who know how to judge its accuracy, currency, and generalizability (counselors and journalist are not equipped to do this);

(3) that the information contained in different delivery media (e.g., a microfilm casette and a pamphlet) is contradictory with respect to the same occupational topics.

On the question about do we know enough about occupational forecasting to purport to disseminate accurate projections to students, I would submit that our values require us to disseminate the most accurate projections possible (with the appropriate caveats, of course.) The point is that people will make their career decisions with some notion about the probabilities of their getting a job in certain fields. Why not buttress their subjective notions with the most objective evidence available?

On the question about whether a system is the best way to disseminate the information, as opposed to putting it into the curriculum or into a counselor-controlled guidance process, I would suggest that a system is essential to develop the information, whereas the appropriate method of dissemination is indeed a legitimate evaluation question. Common sense ought to tell us that some system for collecting and appraising occupational data from a wide variety of sources is essential before decisions are made about what to disseminate. The amount and quality of local/state occupational data varies enormously. The State Employment Service, councils of government, city planning agencies, the Bureau of Labor Statistics (BLS) and other organizations produce local occupational data. Some system is needed to weigh the reliability of the different data sources. That is, the process by which raw data become information has to be systematic, and technical experts and the key users of the information have to be involved with each other in a systematic way to make sure that the information is worth disseminating. Once an

information base has been established, evaluators can determine whether a system is the best way to disseminate it. Or if a system does seem to be viable strategy, evaluators can help determine what kind of system with the different delivery media and accessing strategies is the most effective.

A related point that many evaluators make, and these evaluators tend to come from such data producing agencies as the Employment Service and BLS, is that there is no value in developing local occupational information unless the data base is sufficiently rich. Right they are! Such comments, however, usually precede a recommendation to spend millions more on new data producing programs. Inasmuch as local occupational data does exist, though it is obviously better and more comprehensive in some areas than in others, doesn't it make sense to inventory what data a community or state has before a decision is made about what new data is needed? A system to develop occupational information from data which already exists would point out these data gaps. It makes sense, to me anyway, that we must determine what local data we've got before we decide how much more is needed.

Another item in the evaluator's agenda is trying to find out what kinds of information do students use most to make career choices, and whether the information which people need varies with age, sex, educational attainment, and occupational assignment. Good item! Knowledge of these sorts of things, obviously, will help career information systems develop and disseminate to the appropriate groups those kinds of information or

topics which are likely to be the most used and used well. But is knowledge of the key occupational topics upon which career decisions rest essential or needed before a decision is made to develop an occupational information base. I think not. Common sense tells us that different people will make career decisions on the basis of different occupational topics. To some people wages and opportunities for advancement are most important. Other prople base their decisions on the kinds of job duties themselves, or on whether the work is done outside or inside. To others the probability of getting a job in a certain field most important. In short, "different folks have different strokes." Comprehensive development of all the occupational topics that are used is important. Otherwise, someone will get short-changed.

A final evaluation item that I shall touch on is everybody's favorite: "How do we know that the benefits of a career information system are worth the cost?" Obviously, we have to be concerned with this question in the assessment of any kind of public program. Should a cost-benefit study be done before career information systems are established in many more states? That depends on what it costs to establish such a system, as well as what is costs to do such a longitudinal study. Based on some demonstration evidence, particularly in the State of Oregon, it seems possible to develop a local/state occupational information base from existing data sources for somewhere between $200,000 and $500,000. The exact amount, obviously, would depend on the size and labor market complexity of the state. The point is that this kind of money is chicken feed when one considers the number of potential users and the kinds of potential use. Even if one were to add delivery costs to this amount, e.g., computer or microfilm costs and the cost of training school personnel

to use the system, the cost per user per year in most instances is likely to be so low (a few dollars) that the sample size required to show a cost-benefit would have to be very large. The larger the sample, the more expensive the study. Conceivably, a study of this nature in a given state would be as costly as the program itself. Does it make any sense to spend as much money on evaluation as on the program itself? Probably not.

On the issue of disseminating the best local and state occupational information available, the Federal Government has done little. Millions of taxpayers' dollars have been spent, however, on the development of sophisticated, computerized career guidance systems which emphasize the process of career decision-making. Federal policy-makers have been so impressed with the capability of the computer to store, retrieve, and sort through and interrelate masses of data that they tended to neglect the quality of the occupational information that was fed into the computer. Metaphorically, we had a situation where the "cannon" for delivery was far better developed that the "shell" of information.

Though the federal contribution to the development of computerized guidance systems has helped produce some valuable insight into what is possible and what is feasible, we still do not know very much about which systems employing various assumptions about the career guidance process are better than other in terms of client outcomes. We don't know, for example, whether a value-based strategy for exploring and choosing among occupations is better than a worker trait-based strategy, or an interest

inventory strategy, or no accessing strategy at all. We still might not know in 30 years. In the meantime, career decision-makers will continue to make decisions on the basis of whatever information they have. Common sense instructs us to make sure that these decisions are made with the help of facts not myths, with information not misinformation. Federal policy, therefore, ought to be oriented toward providing an occupational information base which is worthy of the sophisticated methods of dissemination which taxpayers' dollars have helped develop. The point that guidance personnel make, that "information is not enough," is true, but process is no substitute for content -- without a good data base any guidance strategy or vehicle for dissemination is of limited value.

At the present time there are two kinds of demonstration activities funded by the Federal Government which suggest new policy priorities in the career information system field. One is the Occupational Information Systems Grants Program of the Department of Labor, which this year will cost $3 million. The eight states participating in this program are now trying to develop the kind of local/state information base from existing data sources that I have been talking about. By late this year most of the states will have marketed this information to a variety of user agencies - mostly high schools and community colleges - which will deliver this information to clients in different ways. The other federal demonstration activity to keep your eye on is the Educational Information for Student Choice project of the Fund for the Improvement of Postsecondary Education (FIPSE) which this year will cost about $1.3 million. Several of the 27 projects are concerned with developing

and disseminating information about the programs and characteristics of postsecondary institutions and to link this information to the education and training requirements of several occupations. Such information will help students become more intelligent consumers of postsecondary education.

A third demonstration activity worth noting here is the educational brokering projects of both NIE and FIPSE. These projects involve variously the dissemination of occupational and education-training information to adults, counseling (including counseling by telephone), job seeking techniques, and personal assessment. Much as these broker services for adult learners show promise, ultimately they are also dependent upon high quality occupational and educational information. Any counseling is more likely to be effective if there is accurate information to counsel with.

Together the Labor Dept. and FIPSE programs have the essential ingredients of career information. Occupational information is provided by one; education and training information by the other. The former is useful for the individual exploring careers; the latter is needed by the person who has made at least a tentative career decision and desires some formal schooling or training to prepare himself for entry into an occupation.

Common sense would put both kinds of information into the same system. This is precisely what occurred in Oregon: Labor provided funds for occupational information development; HEW's FIPSE funded the development of the education-training file. Both agencies have phased out their funding, and the updating of the original information base is now being financed by user fees. This happy collaboration of the two agencies lamentably was not a federal idea. The multi-agency consortium of data producers (like the Oregon Employment Service) and data users (like the State Education Department and local school districts which use the system) which oversees the Oregon Career Information System must take the credit. I think we "Feds" could learn much from Oregon's example of common sense.

On the basis of the preceding discussion, I would argue that a national commitment should be made to 1) develop immediately the best local and state occupational and educational information by systematically inventorying and appraising existing data sources; 2) producing new data on the state and local level where it can be shown that there are serious data gaps; and 3) disseminate such information to career decision-makers through the schools and other social service agencies, and to manpower and educational planners who can use much of the same information.

How much priority should be given to this agenda compared to other agendas in the education - work nexus is largely a matter of common sense tempered with evaluation evidence. I have tried to indicate on logical grounds that career and vocational education in the absence of accurate, up-to-date, and locally relevant career information does not

make sense. Not only is it inefficient and unjust to expect a young person to choose a career or select specific vocational training with inadequate labor market facts, but it is also difficult to plan the kinds of vocational training which should be made available without such facts. Given the tremendous amount of time that most people spend in the world of work, it would seem that the development and dissemination of career information is as important as any other kind of information that is disseminated in school.

Happily, evaluation evidence does indicate that occupational information makes a difference. Evaluation evidence is less certain about the payoffs of certain career education curricula, career guidance practices, or vocational skill training on the high school level. Some of the funds which now support these kinds of education - work activities might well be diverted toward the development and dissemination of career information instead.

Especially in a bicentennial year, we might resort a little more to our common sense and use social science to keep our newspapers honest. Evaluators and statisticians serve us well as impertinent questioners. They are particularly helpful in determining whether a certain policy works and why or why not? Evaluators are less helpful in determining what policy should be, for many of these decisions are based on values or gut level feelings about what is right. In the area of providing better information for career choice, we can conclude that our federal technocrats and bureaucrats with their armies of evaluators have not asked the right questions. Despite the investment of millions of

dollars in career education projects, students in almost all parts of the country cannot get answers to such mundane questions as how much comptometer operators make in Kansas or how many fiddlers play in Peoria.

I have not tried to suggest here that evaluation is not worthwhile. I am distrubed, however, that the Federal Government has deferred too much to evaluators who want all the evidence to be in before a larger operational Federal role is contemplated in the career information system field. Continued emphasis on research, development, and demonstration will please the system developers, who have used public money to develop their systems, the private consulting outfits, which get paid handsomely to answer the hard evaluation questions, and the companies which sell computer or microfilm services and which stand to make a tidy profit if their career information or guidance system is widely adopted. Though much valuable experience has resulted from this entrepreneurial activity, many of the systems in the marketplace disseminate poor or unverified information. The consumer of the information is <u>not yet represented</u>, and the agencies which buy into the various systems have little objective information with which to compare the effectiveness and costs of the different systems.

The Federal Government should assure that the best possible occupational and education - training information is developed and disseminated in all 50 states and dependent areas. A mechanism to bring this about is to provide incentive grants to States to develop their own career information systems with federal guidance during the first few years. That was the intent of the Labor Department 8-state demonstration which

I mentioned, and this is the kind of thing which I think ought to be extended with HEW participation as well.

In summary, the decision to develop reliable, up-to-date occupational information in a state or local area should not be totally or even primarily contingent upon evidence which shows that people use this information or that they use it intelligently in the process of making career choices. Such a decision ought to rest more on the fundamental value of having the right to be informed in order to make the most of one's own life choices. Our liberal democratic society, whose economy is in principle organized on the basis of the free market, values efficiency, equality of opportunity, social mobility and freedom of choice. Armed with information the common man is supposed to be able to make the most of the decisions that are necessary for his well-being. We assume that most of the ills of the society are the product of ignorance and that a little correct information is better than none at all and certainly much better than a lot of incorrect information. In the United States, or anywhere else that values freedom of choice, that's just plain common sense.